What is Claimed is:

1. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a removable laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity.

2. The training barrel of claim 1, wherein said removable laser module is substantially cylindrical and is concentric with said barrel-shaped member, such that said removable laser module emits the laser signal along a longitudinal centerline of the training barrel.

3. The training barrel of claim 1, wherein replacement of the conventional barrel with the training barrel, inclusive of said removable laser module, does not substantially affect holstering of the firearm.

4. The training barrel of claim 1, wherein said removable laser module lies substantially within said second cavity and protrudes from the distal end of said barrel-shaped member by no more than 1 cm in a longitudinal direction.

5. The training barrel of claim 1, wherein said removable laser module has a threaded outer surface and said second cavity has a threaded interior surface adapted to receive the threaded outer surface of said removable laser module.

6. The training barrel of claim 1, wherein said removable laser module does not protrude from the distal end of said barrel-shaped member.

7. The training barrel of claim 1, wherein the training barrel replaces a barrel of a pistol.

8. The training barrel of claim 1, wherein the training barrel is coupled with an upper receiver, said training barrel and said upper receiver replacing a barrel and upper receiver of a rifle.

9. The training barrel of claim 1, wherein said first cavity is sized to prevent chambering of a conventional blank cartridge or of a live round.

10. The training barrel of claim 1, wherein the training barrel and the blank cartridge are color coded to prevent mismatching of cartridges with said training barrel.

11. The training barrel of claim 1, further comprising:

an ultrasonic transmitter adapted to emit an ultrasonic acoustic signal simultaneously with the laser signal.

12. The training barrel of claim 1, wherein:

in an operational mode, said removable laser module emits a laser pulse in response to the mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

in a boresighting mode, said removable laser module emits a continuous laser beam to permit a direction of emission of said removable laser module to be boresighted with a longitudinal centerline of the firearm.

13. The training barrel of claim 1, wherein the laser signal is a modulated laser pulse, and wherein said training barrel corresponds to a target adapted to detect the modulated laser pulse.

14. The training barrel of claim 1, wherein the firearm fires the blank cartridge using one of: powder, compressed air, and carbon dioxide.

15. The training barrel of claim 1, wherein said removable laser module is held in said second cavity by frictional force between an outer surface of said removable laser module and an interior surface of said second cavity.

16. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity and comprising: a substantially cylindrical housing insertable into said second cavity; a mechanical wave sensor disposed within said housing and adapted to produce a trigger signal in response to a mechanical wave produced by firing the blank cartridge in said first cavity; a laser transmitter adapted to emit the laser signal in response to the trigger signal; and a power source supplying power to said mechanical wave sensor and said laser transmitter.

17. The training barrel of claim 16, wherein said laser module is substantially cylindrical and is concentric with said barrel-shaped member, such that said laser module emits the laser signal along a longitudinal centerline of the training barrel.

18. The training barrel of claim 16, wherein replacement of the conventional barrel with the training barrel, inclusive of said laser module, does not substantially affect holstering of the firearm.

19. The training barrel of claim 16, wherein said laser module lies substantially within said second cavity and protrudes from the distal end of said barrel-shaped member by no more than 1 cm in a longitudinal direction.

20. The training barrel of claim 16, wherein said laser module is removable from said second cavity.

21. The training barrel of claim 20, wherein said laser module has a threaded outer surface and said second cavity has a threaded interior surface adapted to receive the threaded outer surface of said laser module.

22. The training barrel of claim 16, wherein said laser module in permanently mounted within said second cavity.

23. The training barrel of claim 22, wherein said laser module does not protrude from the distal end of said barrel-shaped member.

24. The training barrel of claim 16, wherein the training barrel replaces a barrel of a pistol.

25. The training barrel of claim 16, wherein the training barrel is coupled with an upper receiver, said training barrel and said upper receiver replacing a barrel and upper receiver of a rifle.

26. The training barrel of claim 16, wherein:

said mechanical wave sensor includes at least one of: a piezoelectric element, an accelerometer, and a strain gauge;

said laser transmitter includes a lens and an optics package that projects the laser signal distally through the lens; and

said power source comprises a button-shaped battery.

27. The training barrel of claim 16, wherein said first cavity is sized to prevent chambering of a conventional blank cartridge or of a live round.

28. The training barrel of claim 16, wherein the training barrel and the blank cartridge are color coded to prevent mismatching of cartridges with said training barrel.

29. The training barrel of claim 16, further comprising:

an ultrasonic transmitter adapted to emit an ultrasonic acoustic signal simultaneously with the laser signal.

30. The training barrel of claim 16, wherein:

in an operational mode, said laser module emits a laser pulse in response to the mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

in a boresighting mode, said laser module emits a continuous laser beam to permit a direction of emission of the laser module to be boresighted with a longitudinal centerline of the firearm.

31. The training barrel of claim 16, wherein the laser signal is a modulated laser pulse, and wherein said training barrel corresponds to a target adapted to detect the modulated laser pulse.

32. The training barrel of claim 16, wherein the firearm fires the blank cartridge using one of: powder, compressed air, and carbon dioxide.

33. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said first cavity being sized to prevent chambering of a live round, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity.

34. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity;

wherein the training barrel and the blank cartridge are color coded to prevent mismatching of cartridges with said training barrel.

35. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge;

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

an ultrasonic transmitter adapted to emit an ultrasonic acoustic signal simultaneously with the laser signal.

36. A detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge, the training barrel comprising:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end;

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the

blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity, wherein;

in an operational mode, said laser module emits a laser pulse in response to the mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

in a boresighting mode, said laser module emits a continuous laser beam to permit a direction of emission of the laser module to be boresighted with a longitudinal centerline of the firearm.

37. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a removable laser module extending into said second cavity, said removable laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity.

38. The training firearm of claim 37, wherein:

said training barrel is detachable from said training firearm; and

said training firearm accommodates a conventional barrel permitting the training firearm to fire projectiles.

39. The training firearm of claim 37, wherein holstering of the training firearm with said training barrel is substantially the same as holstering of the training firearm with said conventional barrel.

40. The training firearm of claim 37, wherein said removable laser module is substantially cylindrical and is concentric with said training barrel, such that said laser module emits the laser signal along a longitudinal centerline of said training barrel.

41. The training firearm of claim 37, wherein said removable laser module lies substantially within said second cavity and protrudes from the distal end of said barrel-shaped member by no more than 1 cm in a longitudinal direction.

42. The training firearm of claim 37, wherein said removable laser module has a threaded outer surface and said second cavity has a threaded interior surface adapted to receive the threaded outer surface of said removable laser module.

43. The training firearm of claim 37, wherein said removable laser module does not protrude from the distal end of said barrel-shaped member.

44. The training firearm of claim 37, wherein said removable laser module comprises:

a substantially cylindrical housing insertable into said second cavity;

a mechanical wave sensor disposed within said housing and adapted to produce a trigger signal in response to the mechanical wave produced by firing the blank cartridge in said first cavity;

a laser transmitter adapted to emit the laser signal in response to the trigger signal; and

a power source supplying power to said mechanical wave sensor and said laser transmitter.

45. The training firearm of claim 37, wherein said first cavity is sized to prevent chambering of a conventional blank cartridge or of a live round.

46. The training firearm of claim 37, wherein the training firearm and the blank cartridge are color coded to prevent mismatching of cartridges with said training barrel.

47. The training firearm of claim 37, further comprising:

an ultrasonic transmitter adapted to emit an ultrasonic acoustic signal simultaneously with the laser signal.

48. The training firearm of claim 37, wherein the laser signal is a modulated laser pulse, and wherein said training firearm corresponds to a target adapted to detect the modulated laser pulse.

49. The training firearm of claim 37, wherein the training firearm fires the blank cartridge using one of: powder, compressed air, and carbon dioxide.

50. The training firearm of claim 37, wherein said removable laser module is held in said second cavity by frictional force between an outer surface of said removable laser module and an interior surface of said second cavity.

51. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said first cavity being sized to prevent chambering of a live round, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity.

52. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity;

wherein the training firearm and the blank cartridge are color coded to prevent mismatching of cartridges with said training barrel.

53. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge;

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

an ultrasonic transmitter adapted to emit an ultrasonic acoustic signal simultaneously with the laser signal.

54. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the

blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity and comprising: a substantially cylindrical housing insertable into said second cavity; a mechanical wave sensor disposed within said housing and adapted to produce a trigger signal in response to a mechanical wave produced by firing the blank cartridge in said first cavity; a laser transmitter adapted to emit the laser signal in response to the trigger signal; and a power source supplying power to said mechanical wave sensor and said laser transmitter.

55. A training firearm that fires a blank cartridge and emits a laser signal upon firing of the blank cartridge, said training firearm comprising:

a pullable trigger for initiating firing of the blank cartridge;

a training barrel having a substantially cylindrical bore with a proximal end and a distal end;

a solid wall extending transversely across the bore of said training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge; and

a laser module extending into said second cavity, said laser module emitting the laser signal in response to a mechanical wave sensed from the firing of the blank cartridge in said first cavity, wherein;

in an operational mode, said laser module emits a laser pulse in response to the mechanical wave sensed from the firing of the blank cartridge in said first cavity; and

in a boresighting mode, said laser module emits a continuous laser beam to permit a direction of emission of the laser module to be boresighted with a longitudinal centerline of the firearm.

56. A laser firearm system for firearm competition or training involving firing a firearm toward a target without use of projectiles, the system comprising:

a training firearm having a trigger, a barrel and a laser transmitter module that emits a laser signal in response to a mechanical wave produced by pulling of the trigger and sensed by the laser transmitter module;

a laser-detecting target adapted to detect the laser signal and produce a laser detection signal;

a processor responsive to the laser detection signal for generating information indicating a hit location of the laser signal on said target;

a remotely-located laser-detecting target and processor; and

a communication network linking said processor to said remotely-located processor.

57. The system of claim 56, wherein said laser-detecting target includes an array of laser light detectors adapted to detect the laser signal and to produce the laser detection signal.

58. The system of claim 56, wherein said laser transmitter module emits a modulated laser signal along a longitudinal centerline of the barrel in response to the mechanical wave produced by pulling of the trigger and sensed by said laser-detecting target.

59. The system of claim 58, wherein said laser-detecting target is configured to detect only laser signals modulated in the manner of said modulated laser signal.

60. The system of claim 58, wherein a modulation of the modulated laser signal identifies the training firearm emitting the modulated laser signal.

61. The system of claim 56, wherein pulling of the trigger causes firing of a blank cartridge that produces the mechanical wave.

62. The system of claim 56, wherein said training firearm comprises:

a conventional firearm; and

a cylindrical laser module inserted into a barrel of the conventional firearm.

63. The system of claim 56, wherein said training firearm comprises a training barrel incapable of firing a projectile.

64. The system of claim 63, wherein said training barrel is a detachable training barrel that replaces a conventional detachable barrel of a firearm to convert the firearm into a training device that emits a laser signal upon firing a blank cartridge.

65. The system of claim 64, wherein said training barrel comprises:

a barrel-shaped member defining a substantially cylindrical bore of the training barrel, with a proximal end and a distal end; and

a solid wall extending transversely across the bore of the training barrel and separating the bore into a first substantially cylindrical cavity extending inward from the proximal end and a second substantially cylindrical cavity extending inward from the distal end, said first cavity serving as a firing chamber and being adapted to receive the blank cartridge, said wall preventing forward discharge toward the distal end upon firing of the blank cartridge, the laser transmitter module extending into said second cavity and emitting the laser signal in response to the mechanical wave sensed from the firing of the blank cartridge in said first cavity.

66. The system of claim 56, wherein said training firearm is incapable of firing a projectile.

67. The system of claim 56, wherein said laser-detecting target is formed in the shape of a bull's eye.

68. The system of claim 56, wherein said laser-detecting target comprises a plurality of range-scaled targets.

69. The system of claim 56, further comprising:

an ultrasonic transmitter coupled to said training firearm and adapted to transmit an ultrasonic signal simultaneously with the laser signal;

an ultrasonic detector coupled to said laser-detecting target and adapted to detect an arrival time of the ultrasonic signal at said laser-detecting target;

wherein said processor determines a distance between said training firearm and said laser-detecting target from a time delay between an arrival time of the laser signal at said laser-detecting target and the arrival time of the ultrasonic signal.

70. The system of claim 56, wherein said processor determines a center of gravity of a group of laser signals sequentially detected by the laser-detecting target.

71. The system of claim 56, wherein said communication network includes a server linked to said first and second processors.

72. The system of claim 56, wherein:

said training firearm, said laser-detecting target and said processor are located at a first site, and said remotely-located laser-detecting target and processor are located at a second site; and

said communication network includes a user interface permitting users at said first site to communicate with users at the second site.

73. The system of claim 72, wherein said user interface permits coordination of competition between users at said first site and users at said second site.

74. The system of claim 72, wherein said user interface permits viewing at said first site of target detection results from said second site.

75. The system of claim 72, wherein said user interface includes a web site.

76. The system of claim 56, wherein said communication network is a global communication network

77. A laser firearm system for firearm competition or training involving firing a firearm toward a target without use of projectiles, the system comprising:

a training firearm including a trigger, a barrel and a laser transmitter module that emits a laser signal in response to a mechanical wave produced by pulling of the trigger and sensed by the laser transmitter module;

a laser-detecting target adapted to detect the laser signal and produce a laser detection signal;

an ultrasonic transmitter coupled to said training firearm and adapted to transmit an ultrasonic signal simultaneously with the laser signal;

an ultrasonic detector coupled to said laser-detecting target and adapted to detect an arrival time of the ultrasonic signal at said laser-detecting target; and

a processor coupled to said laser detecting target and said ultrasonic detector, said processor being responsive to the laser detection signal for generating information indicating a hit location of the laser signal on said target, and determining a distance between said training firearm and said laser-detecting target from a time delay between

an arrival time of the laser signal at said laser-detecting target and the arrival time of the ultrasonic signal.

78. The system of claim 77, wherein the system prevents cheating caused by locating said training firearm improperly close to said laser-detecting target by reporting the distance between said training firearm and said laser-detecting target together with the information indicating the hit location.

79. A laser firearm system for firearm competition or training involving firing a firearm toward a target without use of projectiles, the system comprising:

a training firearm including a trigger, a barrel and a laser transmitter module that emits a laser signal in response to a mechanical wave produced by pulling of the trigger and sensed by the laser transmitter module;

a laser-detecting target adapted to detect the laser signal and produce a laser detection signal; and

a processor responsive to the laser detection signal for generating information indicating a hit location of the laser signal on said target, wherein said processor determines a center of gravity of a group of laser signals sequentially detected by the laser light detectors.